

CLAIMS

1. A lid for an underdrain block, the underdrain block including a top surface defining an opening for receiving fill material, the top surface forming a ridge circumscribing the opening, the lid comprising:
a top, a bottom and a peripheral edge, the peripheral edge comprising a rim adapted to interlock with the ridge to close off the opening.
2. The lid of claim 1 wherein the ridge of the underdrain block includes a flange perpendicular to the top surface and the rim is adapted to tightly fit over the flange so that the rim interlocks with the flange.
3. The lid of claim 2 wherein the flange is positioned within the opening of the underdrain block and the rim is configured to be positioned within the opening of the underdrain block to interlock onto the flange.
4. The lid of claim 2 wherein the flange is directed away from the opening of the underdrain block and the rim is adapted to be positioned over the ridge of the underdrain block to interlock onto the flange.
5. The lid of claim 1 further comprising a size that is adapted to snap lock onto the ridge when the lid is fitted within the opening of the underdrain block.
6. The lid of claim 1 wherein the rim is sized to fit tightly onto the ridge.
7. The lid of claim 1 wherein the rim is u-shaped.
8. The lid of claim 7 wherein the u-shaped rim defines a channel and the rim further comprises a sealing member fitted within the channel.
9. The lid of claim 8 wherein the sealing member comprises a bead of plastic sealing compound.

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10. The lid of claim 8 wherein the sealing member comprises an o-ring.
11. The lid of claim 1 wherein the bottom of the lid comprises one or more protrusions for anchoring the lid in the fill material.
12. A lid for an underdrain block, the underdrain block including a top surface defining an opening for receiving fill material, the top surface forming a ridge surrounding the opening, the ridge comprising a flange perpendicular to the top surface and directed downward into the opening, the lid comprising:
- a top, a bottom, and a peripheral edge, the peripheral edge comprising a u-shaped rim;
- the u-shaped rim comprising locking means configured to tightly fit over the flange so that the rim interlocks with the flange;
- the lid manufactured from an impervious plastic; and
- the lid comprising a size to snap lock onto the ridge so as to tightly close the opening.
13. The lid of claim 12 wherein the u-shaped rim defines a channel and the rim further comprises a sealing member fitted within the channel.
14. The lid of claim 12 wherein the locking means comprises a rim size configured to tightly fit over the flange.
15. The lid of claim 12 wherein the bottom of the lid comprises one or more protrusions for anchoring the lid in the fill material.
16. A lid for an underdrain block, the underdrain block including a top surface defining an opening for receiving fill material, the top surface forming a ridge surrounding the opening, the lid comprising:
- a top, a bottom, and a peripheral edge, the peripheral edge comprising a u-shaped rim;
- the u-shaped rim comprising a locking means adapted to tightly fit over the ridge so that the rim interlocks with the ridge;

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the lid comprising a size to snap lock onto the ridge so as to tightly close the opening.

17. The lid of claim 16 wherein the u-shaped rim defines a channel and the rim further comprises a sealing member fitted within the channel, the sealing member adapted to seal the rim onto the ridge.

18. The lid of claim 16 wherein the locking means comprises prongs adapted to tightly engage with the ridge.

19. An underdrain block for a filter system comprising:

a hollow plastic housing;

the housing comprising a top wall, a bottom wall, and ends walls and side walls connecting the top wall to the bottom wall, the bottom wall forming two lateral rows of support legs to provide for the passage of fluid;

the top wall defining an opening for receiving the fill material, the top wall forming a ridge surrounding the opening;

a lid for sealing the opening in the top wall, the lid comprising a top, a bottom, and a peripheral edge, the peripheral edge comprising a u-shaped rim;

the u-shaped rim comprising a locking means to tightly fit over the ridge so that that the rim interlocks with the ridge.

20. The underdrain block of claim 19 wherein the lid comprises a size to snap lock onto the ridge so as to seal the opening.

21. The underdrain block of claim 19 wherein the ridge of the underdrain block comprises a flange perpendicular to the top surface and directed downward into the opening, and the rim comprises a size to fit tightly over the flange so that the rim interlocks with the flange.

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1 22. The underdrain block of claim 19 wherein the u-shaped rim defines
2 a channel and the rim further comprises a sealing member fitted
3 within the channel to seal the rim onto the flange.

1 23. The underdrain block of claim 19 wherein the locking means
2 comprises a rim sized to interlock with the rim.

1 24. The underdrain block of claim 19 wherein the bottom of the lid
2 comprises one or more protrusions for anchoring the lid in the fill
3 material.

1 25. A lid for an underdrain block, the underdrain block including a top
2 surface defining an opening for receiving fill material, the top
3 surface forming a ridge surrounding the opening, the ridge
4 comprising a flange perpendicular to the top surface and directed
5 downward into the opening, the lid comprising:

6 a top, a bottom, and a peripheral edge, the peripheral edge comprising a
7 u-shaped rim;

8 the u-shaped rim comprising locking means configured to tightly fit over
9 the flange so that the rim interlocks with the flange, the u-shaped
10 rim defining a channel and the rim further comprising a sealing
11 member fitted within the channel to seal the rim onto the flange

12 the lid comprising a size to snap lock onto the ridge so as to tightly close
13 the opening.

1 26. The underdrain block of claim 25 wherein the bottom of the lid
2 comprises one or more protrusions for anchoring the lid in the fill
3 material.

1 27. An underdrain block for a filter system comprising:

2 a hollow, plastic housing;

3 the housing comprising a top wall, a bottom wall, and end and side walls
4 connecting the top wall to the bottom wall, the bottom wall forming
5 two lateral rows of support legs to provide for the passage of fluid;

the top wall defining an opening for receiving the fill material, the top wall forming a ridge surrounding the opening;
a lid for sealing the opening in the top wall, the lid comprising a top, a bottom, and a peripheral edge. the peripheral edge comprising a u-shaped rim;
the u-shaped rim comprising a locking means to tightly fit over the ridge so that the rim interlocks with the ridge;
the lid comprising a size to snap lock onto the ridge so as to seal the opening.

28. A support system for supporting granular filter media above a filter bottom, the filter bottom having an infrastructure, the support system comprising:
a layer of underdrain blocks placed over infrastructure of the filter bottom, each underdrain block comprising a top and a bottom, the top defining an opening, each underdrain block further comprising a lid to seal the opening;
one or more porous plates placed over the underdrain blocks to support the filter media;
anchoring means for securing the porous plates.

29. The support system of claim 28 wherein the lid defines one or more bolt holes, the porous plate defines one or more plate bolt holes aligned to the bolt holes of the lid and the anchoring means comprises bolts threaded through the lid bolt holes and the porous plate bolt holes to secure the porous plate to the lid.

30. The support system of claim 28 wherein the lid defines one or more bolt holes, the porous plate defines one or more plate bolt holes aligned to the bolt holes of the lid and the anchoring means comprises expandable anchors threaded through the lid bolt holes and the porous plate bolt holes to secure the porous plate to the lid.

31. The support system of claim 28 wherein the underdrain block comprises fill material and the anchoring means is anchored into the fill material.

32. The support system of claim 28 wherein the underdrain block comprises fill material and the fill material forms protrusions extending out from the top of the block, the porous plate defines a first set of openings, the lid defines a second set of openings aligned with the first set of openings in the plate, and the protrusions extend through the first and second set of openings and are secured with a securing mechanism to anchor the porous plate to the underdrain block.

33. The support system of claim 28 wherein the anchoring means comprises anchors extending from the porous plate between the underdrain blocks adapted to secure the porous plate to the infrastructure.

34. A support system for supporting granular filter media above a filter bottom, the filter bottom having an infrastructure, the support system comprising:
a layer of underdrain blocks placed over infrastructure of the filter bottom, each underdrain block comprising a top and a bottom, the top defining an opening, the underdrain block further comprising a lid for sealing the opening, the lid defining one or more bolt holes;
one or more porous plates placed over the underdrain blocks to support the filter media, the porous plate defining one or more plate bolt holes aligned to the bolt holes of the lid; and
bolts threaded through the lid bolt holes and the plate bolt holes to secure the porous plate to the lid.

35. A support system for supporting granular filter media above a filter bottom, the filter bottom having an infrastructure, the support system comprising:

a layer of underdrain blocks filled with fill material placed over the infrastructure of the filter bottom, each underdrain block comprising a top, a bottom and a lid, the fill material defining threaded bolt holes, the lid defining one or more lid bolt holes; one or more porous plates placed over the underdrain blocks to support the filter media, the porous plate defining one or more plate bolt holes aligned to the bolt holes of the lid and the threaded bolt holes; and anchors threaded through the lid bolt holes and the porous plate bolt holes and screwed into the threaded bolt holes of the fill material to secure the porous plate and the lid.

36. A support system for supporting granular filter media above a filter bottom, the filter bottom having an infrastructure, the support system comprising:

a layer of underdrain blocks placed over infrastructure of the filter bottom, each underdrain block comprising a top and a bottom, the top defining an opening, and a lid for sealing the opening, the lid comprising one or more protrusions perpendicular to the top; one or more porous plates placed over the underdrain blocks to support the filter media, the porous plate defining one or more openings aligned to the protrusions of the lid; wherein the protrusions extend through the openings and are secured with a securing mechanism to anchor the porous plate to the underdrain block.